

ON THE APPLICATION TO METEOROLOGY OF THE ASTRONOMICAL CYCLE OF 744 YEARS

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In a preceding note I anticipated applying the astronomical cycle of 744 years to meteorology, also the 372-year period and the half-period of 186 years. It is difficult to verify this hypothesis, for meteorological observations, even for temperature and rain, are scarcely two centuries long. The only phenomena noted by historians are the extremely cold winters and the severely hot summers. Arago has got together a list of the very abnormal seasons recorded during the course of several centuries. Evidently incomplete though it is, it nevertheless furnishes a valuable source of material.

A comparison of the dates reveals not only the cycle of 744 years, but also the period of 372, and generally even that of 186 years. There is to be found usually, in the intervals, a difference of one year more or less, but on the whole the coincidences are remarkable.

The severest winters experienced in the last two centuries belong to the years 1740, 1776, 1789, 1795, 1830, 1871, 1880, 1891, 1895, and 1917. Every one of these winters belongs to a series, appearing in the following table with the verification of the intervals between the dates:

TABLE 1.—Recurrences of extremely cold winters

1st series	2d series	3d series	4th series	5th series
995 186 +372 1553 187 1740	1403 187 1500 186 1776	859 744 1603 186 1789	864 372 1236 186 1422 186 1608 187 1795	1272 186 1458 372 1830
6th series	7th series	8th series	9th series	10th series
940 186 1126 373 1499 185 1684 187 1871	764 372 +187 1323 185 1508 186 1694 186 1880	1333 185 1518 373 1891	964 186 1150 373 1523 186 1709 186 1895	801 187 988 371 1359 185 1544 373 1917

Among the severely hot summers one notes especially those of the years 1793, 1811, 1846, 1893, and 1911. We find the same periodicity as for the winters (Table 2).

TABLE 2.—Recurrences of severely hot summers

1st series	2d series	3d series	4th series	5th series
1422 186 1608 185 1793	1251 373 1624 187 1811	1102 186 1288 185 1473 373 1846	1522 185 1707 186 1893	1540 186 1726 185 1911

Many more examples might be noted than there is room for in this note. Particularly, is it very interesting to find that all the winters designated by Arago

from the 8th to the 12th centuries have their counterparts after about 744 years in the 15th to the 19th centuries. Such a series of coincidences can not be effects of chance; hence it seems logical to conclude that there is a parallelism between the astronomical cycle and the general circulation of the earth's atmosphere.

If the supposition is accurate, we should in the near future experience a heavy winter. It will be the counterpart, after 186 years, of the winter of 1740, and after 373 years, of that of 1553. The winter of 1740 was concentrated into January and February; if it was somewhat less rigorous in southern Europe, it was very cold in northern France and especially in England. The Seine and the Thames were icebound for weeks together, and the bridges at Rouen were swept away by ice gorges. The winter of 1552-53 was a terrible one for the soldiers of Charles the Fifth during the famous siege of Metz.

Shall we experience in 1926 the periodic return of these heavy winters? The near future will tell us whether or not the supposition is correct.

SCIENTIFIC CONGRESSES IN SWITZERLAND

The programs of two important scientific congresses held this summer at Davos-Platz, Switzerland, are printed below. The first is that of the International Commission on Solar Radiation, which is a commission of the International Meteorological Committee, its meeting being held on August 31-September 2, inclusive. The second is that of the Climatological Congress organized by the Davos Institute for Alpine Physiology and Tuberculosis Research, meeting from August 16th to 22d, inclusive. The programs indicate that the congress on solar radiation is intended essentially for discussion and action on a program for future work, and the climatological congress primarily for the presentation and discussion of scientific papers. The titles of the papers indicate that when published they will form a valuable survey, not otherwise easily obtainable, of the present status of research on the relations between high-altitude climate and health.—B. M. V.

THE INTERNATIONAL COMMISSION ON SOLAR RADIATION

1. The principal resolutions drawn at the first conference in Utrecht (September, 1923), especially those touching the proposal of the Central Institute for Europe on actinometric measurements.

2. Problems of actinometry, with reference to:

(a) Climatology (thermal variations through radiation). Report by A. Angström.

(b) Meteorology (optical-dynamical problems). Report by Hergesell and Süring.

(c) Agriculture.

(d) Medicine. Report by Dorno.

3. Short communication by Abbot on his recent work on the "solar constant," and concerning also the establishment of a large observatory in Asia or Africa for researches on solar radiation.

4. Proposal by Kimball on the possibility of creating an annual publication for assembling systematic observations of solar radiation, and on taking steps toward extending radiation studies to higher stations.

5. Communications from Gorczynsky: (1) The use of solar filters in actinometry, with some results obtained in the Saharan oases. (2) On new pyrheliographs and spectrographs for measuring solar radiations.

6. Proposal of Kalitin on the need of unifying solar filters used in the Michelson actinometer for measuring solar radiation.

7. Communication from Süring on methods of testing actinometers and heliographs. Organization of subcommission on financial matters involving the Central Institute for Actinometry.